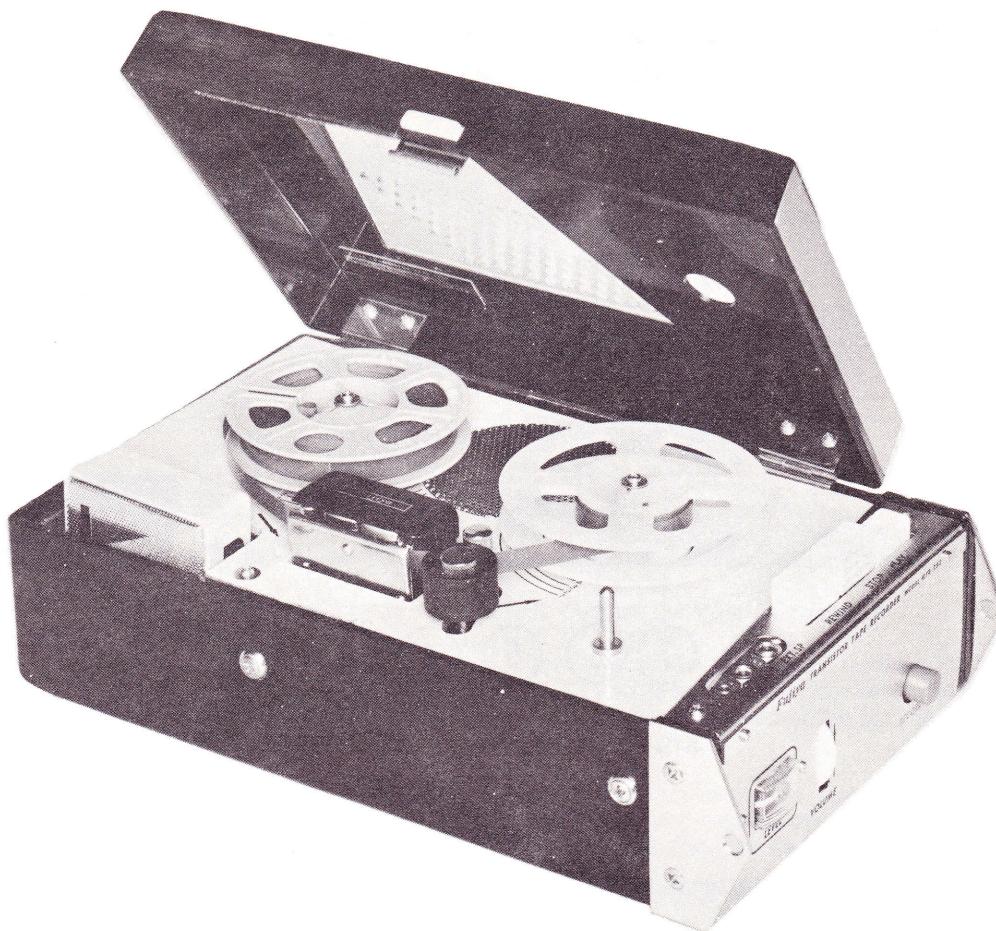


PHOTOFAC<sup>®</sup> Folderwith CIRCUITTRACE<sup>\*</sup>  
\*TRADE MARKFUJIYA MODEL  
MTR252FUJIYA MODEL  
MTR252FUJIYA MODEL  
MTR252

## GENERAL INFORMATION

The Fujiya Model MTR-252 is a two-speed, dual-track, battery powered tape recorder. It will take reels up to three inches in diameter.

A level meter is provided for telling the condition of the motor batteries and recording level.

Pushbuttons are provided for each mode of operation; Rewind, Stop, and Play-Record.

Speed change is accomplished by removing the large diameter capstan.

The two tape speeds are 1 7/8 and 3 3/4 ips. The playing or recording time for a 300 ft. reel at 3 3/4 ips is 28 minutes and at 1 7/8 ips is 56 minutes.

## Supplied By:

Fujiya Corporation, Ltd.  
Suite 3202, Chrysler Building  
405 Lexington, Avenue,  
New York 17, New York

SET 571

FOLDER 9

## HOWARD W. SAMS &amp; CO., INC. Indianapolis 6, Indiana



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of CQ482

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1962 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

DATE 3 - 62

SET 571

FOLDER 9

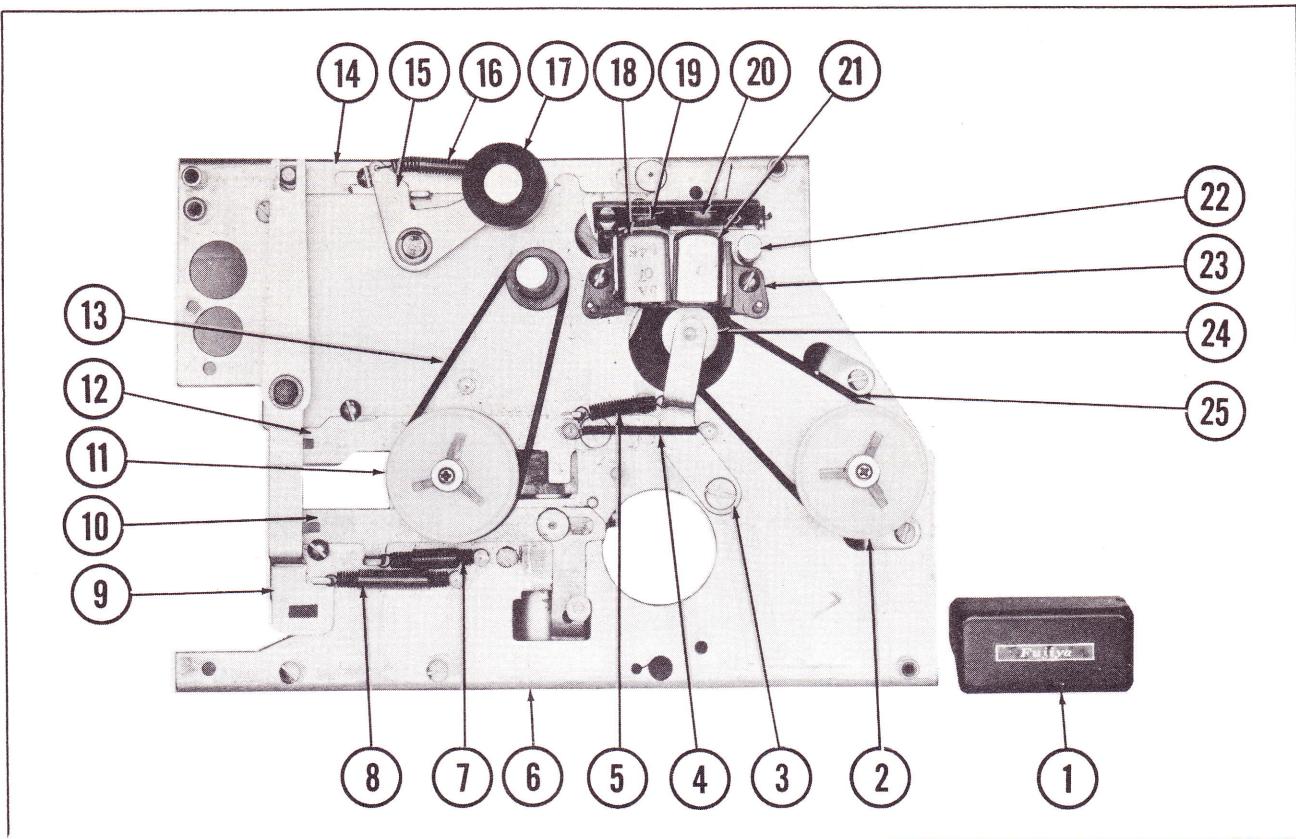


FIG.1 TOP VIEW OF MECHANISM

### PREPARING FOR OPERATION

1. Install 6 penlight type batteries in each case in the battery compartment.
2. Remove the accessories from the storage compartment.

### FUNCTION OF CONTROLS AND JACKS

#### Stop

Depressing the Stop button will stop the mode of operation and remove the power to the amplifier and motor.

#### Rewind

Depressing this button will rewind the tape onto the supply reel.

#### Play-Record

This control has two functions. Depressing the button with the record button pushed in places the recorder in the record mode. Depressing the button but leaving the record button out, places the recorder in the play mode.

#### Record

This button must be pushed in and held until the Play-Record button is depressed to make a recording. It serves as a safety lock during playback to prevent accidental erasure.

#### Volume

Rotating the knob in the direction of the arrow,

increases the volume level. Rotation in the opposite direction, decreases the volume.

#### Level Meter

The level meter has two functions:

1. It serves as a recording level indicator while recording.
2. It indicates the condition of the batteries.

#### External Speaker

A patch cord may be plugged into the jack and the other end connected to the voice coil terminals of an external speaker. Earphones may be plugged into this jack also.

#### Microphone

The mic jack has two functions. The first function is to make a recording. Secondly, the microphone is equipped with a switch so the power to the motor can be cut off or on, at any time, during a recording.

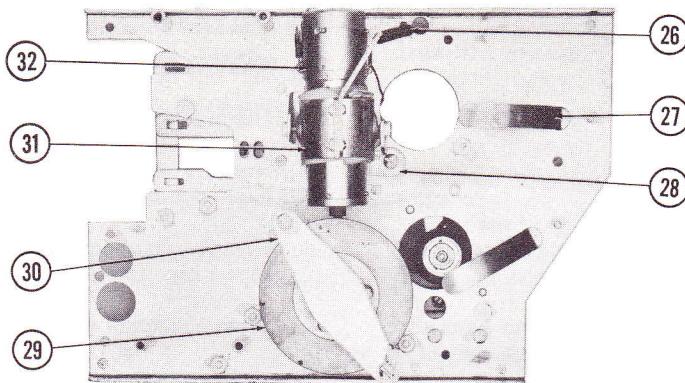


FIG.2 BOTTOM VIEW OF MECHANISM

### OPERATING INSTRUCTIONS

#### Threading the Tape

1. Depress the stop button.
2. Open the lid.
3. Unwind about 14 inches of tape from a full reel and place the reel on the supply spindle.
4. Place an empty reel on the take-up spindle.
5. Hold a section of tape taut and insert it in the tape slot.
6. Insert the free end of the tape into one of the three slots in the take-up reel. Turn the reel a few turns to secure the tape to the reel and to take up all slack between reels.

#### Recording

1. Thread the tape, see "Threading the Tape".
2. Plug the microphone into the microphone jack.
3. Make sure the motor control switch on the microphone is in the "Off" position.
4. Depress the record safety button and the play-record button.
5. Depress the motor control switch on the microphone and slide it to the "On" position.
6. Talk into the microphone in a normal manner and adjust the volume control until the needle of the level meter is between the red and white range. This gives the correct volume level for recording.
7. To stop the tape motion temporarily, slide the motor control switch to "Off".
8. To stop the recorder, depress the Stop push-button.

#### Playback

1. Thread the tape, see "Threading the Tape".

2. Depress the Play-Record button.
3. Adjust the Volume control.
4. If earphones are used, plug them into the external speaker jack. The self-contained speaker is disconnected when the earphones are plugged in.
5. If the microphone is plugged in during playback, the motor control switch can be used to start and stop the tape motion.

#### To Erase a Recording

The tape is automatically erased when making a recording. If it is desired to erase a tape without putting new material on it, proceed as described under Recording, but, turn the Volume control to its minimum position.

#### Dual-Track Recording

Dual-track recordings are made on one-half of the tape at a time. After making a recording, and tape is wound onto the take-up reel, remove the reels. Turn the full reel over, place on the supply spindle, rethread the tape, and continue the recording.

#### External Speaker

Plug a patch cord into the external speaker jack and connect the other end to the voice coil of the external speaker. The self-contained speaker is disconnected when the patch cord is plugged into the external speaker jack.

#### Speed Change

Speed change is accomplished by changing the capstan diameter. The larger diameter is the 3 3/4 speed. To change to 1 7/8 speed, remove the knurled screw and remove the larger diameter capstan bushing.

## DISASSEMBLY

### To Remove the Recorder from the Case

1. Remove pressure roller (17).
2. Remove head cover (1).
3. Remove pushbutton escutcheon.
4. Remove two screws holding the top dress plate. Lift top dress plate up, unsolder the speaker wires, and remove the top dress plate.
5. Remove two screws from the front and back of the case and one from the storage compartment.
6. Lift recorder out of case.
7. Disconnect the level meter leads.
8. Reverse the foregoing procedure to reassemble.

### To Remove Amplifier from Tape Transport

1. Remove the input and output jacks.
2. Disconnect the play-record and erase heads.
3. Remove one screw and one stud holding the push-button assembly.
4. Remove four screws holding the printed board to the tape transport.
5. Disconnect the motor leads.
6. Remove three screws holding the battery terminals.
7. Remove all clamps holding any leads.
8. To reassemble, reverse the foregoing procedure.

## TROUBLE CHART

Symptom	Cause	Remedy
No takeup during record or playback.	<ol style="list-style-type: none"> <li>1. Takeup drive belt (13) broken.</li> <li>2. Felt clutch defective.</li> <li>3. Clutch tension spring weak or broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace.</li> <li>2. Replace clutch assembly under takeup reel (11).</li> <li>3. Replace clutch tension spring.</li> </ol>
No rewind.	<ol style="list-style-type: none"> <li>1. Rewind idler tension spring (5) off or broken.</li> <li>2. Rewind drive belt (25) off or broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace rewind idler tension spring (5).</li> <li>2. Replace rewind drive belt (25).</li> </ol>
Pressure roller does not engage the capstan when play-record button is depressed.	<ol style="list-style-type: none"> <li>1. Pressure roller tension spring (16) off or broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace pressure roller tension spring (16).</li> </ol>
Motor does not disengage the flywheel when the stop button is depressed.	<ol style="list-style-type: none"> <li>1. Stop lever tension spring (7) off or broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace stop lever tension spring (7).</li> </ol>
No record or playback.	<ol style="list-style-type: none"> <li>1. Play-record head (19) defective.</li> <li>2. Defective amplifier.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace play-record head (19).</li> <li>2. Check amplifier for defective components.</li> </ol>
Does not erase.	<ol style="list-style-type: none"> <li>1. Defective erase head (21).</li> <li>2. Broken wire going to the erase head.</li> <li>3. Slide switch on printed board defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace erase head (21).</li> <li>2. Check wires and replace any broken ones.</li> <li>3. If switch is defective, replace.</li> </ol>
Motor runs but flywheel and capstan does not rotate.	<ol style="list-style-type: none"> <li>1. Motor tension spring (26) off or broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace motor tension spring (26).</li> </ol>
Motor does not run and amplifier is dead.	<ol style="list-style-type: none"> <li>1. Batteries are defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace batteries with ones known to be good.</li> </ol>
Pressure pads do not make firm contacts with the heads.	<ol style="list-style-type: none"> <li>1. Pressure pad tension spring broken.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace pressure pad tension spring.</li> </ol>

## CLEANING

The play-record head (18), erase head (21), pressure roller (17), tape guides, and capstan are subject to tape residue which is worn off the tape as it passes these parts. Use a soft cloth and alcohol to clean these parts.

Use a soft cloth and alcohol to clean oil or grease from the pressure roller (17), rewind idler wheel (24), and drive belts.

## LUBRICATION

All rotating parts are provided with oilite bearings. They are factory lubricated and should require

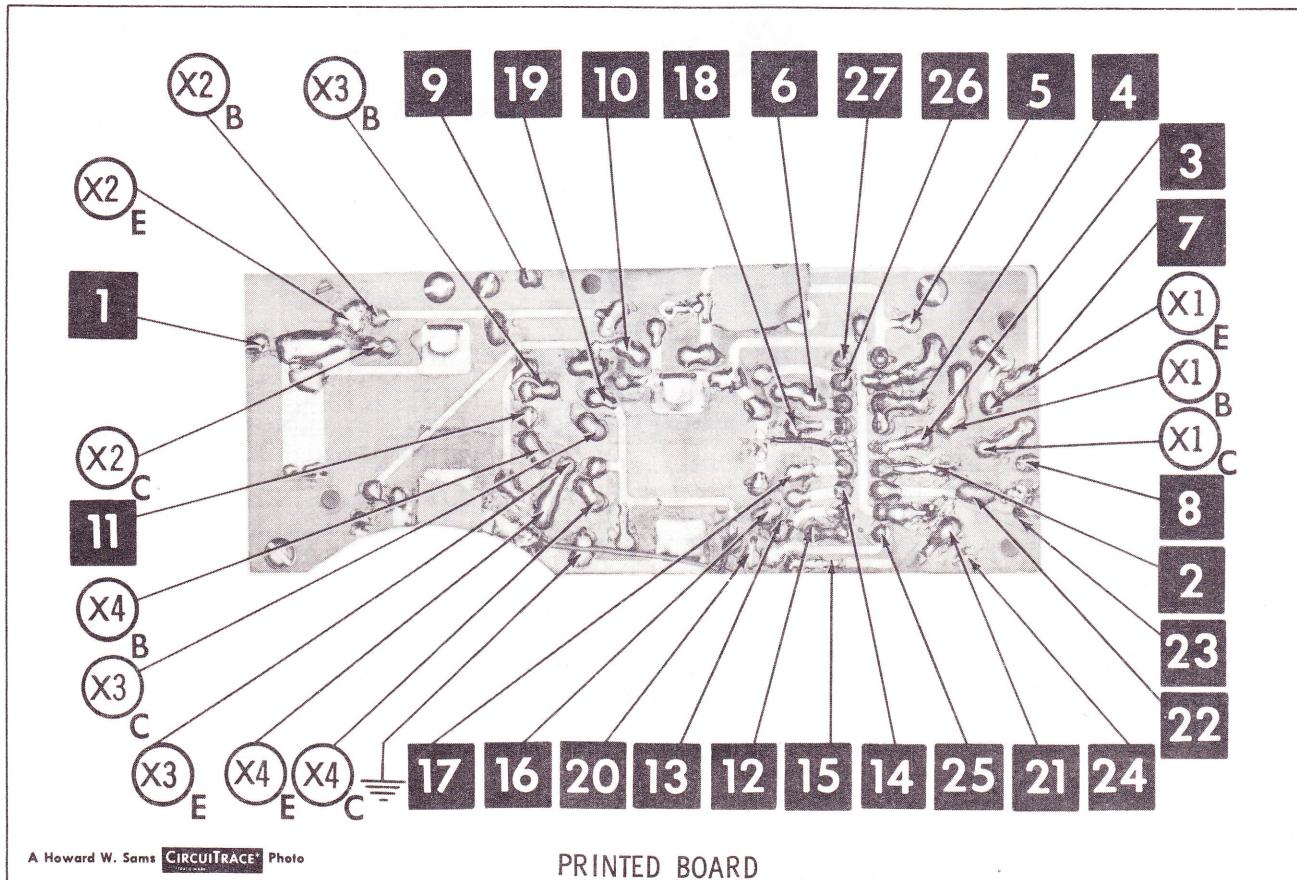
no further lubrication. If lubrication is required, use light weight oil sparingly.

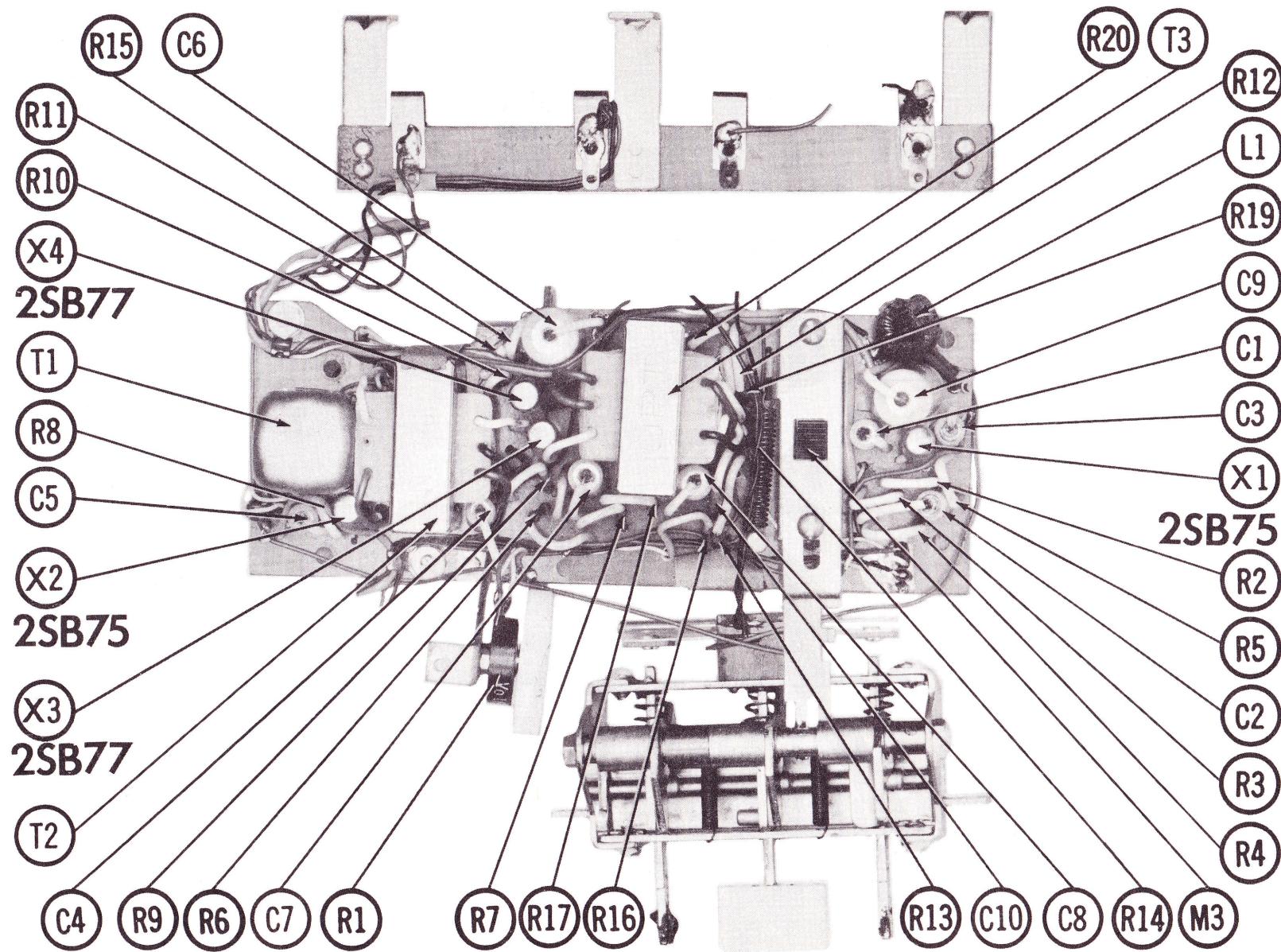
## MECHANICAL PARTS LIST

Ref. No.	Description	Ref. No.	Description
1	Head Cover	17	Pressure Roller
2	Supply Reel	18	Play-Record Head
3	Rewind Idler Lever	19	Play-Record Head Pressure Pad
4	Rewind Lever Tension Spring	20	Erase Head Pressure Pad
5	Rewind Idler Lever Tension Spring	21	Erase Head
6	Base Plate	22	Tape Guide
7	Stop Lever Tension Spring	23	Head Mounting Plate
8	Record Lever Tension Spring	24	Rewind Idler Wheel
9	Record Lever	25	Rewind Drive Belt
10	Stop Lever	26	Motor Tension Spring
11	Takeup Reel	27	Battery Holder Tension Spring
12	Rewind Actuating Lever	28	Motor Mounting Bracket
13	Takeup Drive Belt	29	Flywheel and Capstan
14	Pressure Roller Actuating Lever	30	Flywheel and Capstan Mounting Plate
15	Pressure Roller Lever	31	Motor Mounting Housing
16	Pressure Roller Tension Spring	32	Motor

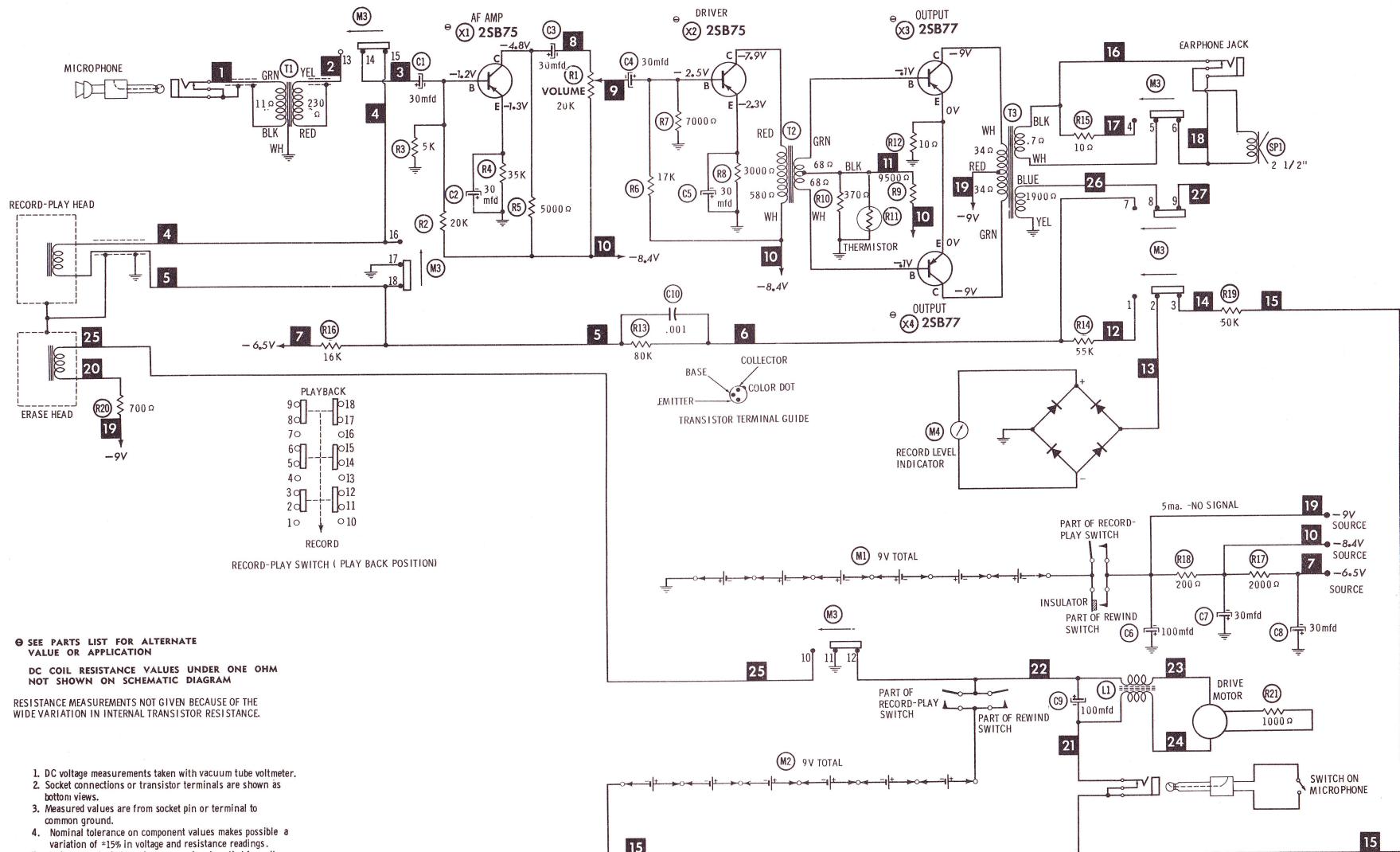
FUJIYA MODEL  
MTR252

FOLDER 9





AMP CHASSIS - TOP VIEW



② SEE PARTS LIST FOR ALTERNATE  
VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM  
NOT SHOWN ON SCHEMATIC DIAGRAM

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

1. DC voltage measurements taken with vacuum tube voltmeter
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of  $\pm 15\%$  in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

# A PHOTOFAC STANDARD NOTATION SCHEMATIC with CIRCUITTRACE®

© Howard W. Sams & Co., Inc. 1962

© Howard W. Sams & Co., Inc. 1982

FUJIYA MODEL  
MTR252

## ELECT. PARTS LIST AND DESCRIPTIONS

## TRANSFORMER (MIC)

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA		NOTES
			RCA PART No.	RAYTHEON PART No.	
X1	2SB75 2N215 *	AF Amplifier	2N406		PNP
X2	2SB75 2N215 *	AF Amplifier	2N406		PNP * Alternate Type
X3	2SB77 2N217 *	Driver	2N408		PNP
X4	2SB77 2N217 *	Driver	2N408		PNP
		Output			PNP
		Output			PNP
		Output			PNP

## TRANSISTORS

ITEM No.	TURNS RATIO	REPLACEMENT DATA					NOTES
		FUJIYA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1	7.8					

## TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO	REPLACEMENT DATA					NOTES
		FUJIYA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	1	1					

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA					NOTES
		FUJIYA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T3	750Ω CT	6-8Ω SEC. 2 20K					

## SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		FUJIYA PART No.	QUAM PART No.		
SP1	2 1/2" PM	6-8Ω			

## BATTERIES

ITEM No.	VOLTAGE	FUJIYA PART No.	REPLACEMENT DATA				NOTES
			BURGESS	EVEREADY	MALLORY		
M1	1 1/2V		"A"	"B"	"A"	"B"	M-15R
M2	1 1/2V			930	1015		M-15R

## MISCELLANEOUS

ITEM No.	PART NAME	FUJIYA PART No.	NOTES
M3 M4	Switch Meter		Record-Playback Record Level Indicator

## WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors  
8524 (Stranded) Available in Ten Colors

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		FUJIYA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	Motor Choke						